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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,197	01/14/2004	Jimmie Earl DeWitt JR.	AUS920030556US1	3551

35525 7590 03/02/2007		EXAMINER
IBM CORP (YA)		DAO, THUY CHAN
C/O YEE & ASSOCIATES PC		
P.O. BOX 802333	ART UNIT	PAPER NUMBER
DALLAS, TX 75380	2192	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/757,197	DEWITT ET AL.
	Examiner	Art Unit	
	Thuy Dao	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _03_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 December 2006_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _14 January 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _10/6, 11/10/06; 1/23/07_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20070221

DETAILED ACTION

1. This action is responsive to the amendment filed on December 13, 2006.

2. Claims 1-20 have been examined.

Response to Amendments

3. Per Applicants' request, claims 1, 11, and 20 have been amended.

4. The objection to the specification is withdrawn in view of Applicants' amendments.

5. The 35 USC §112, second paragraph rejection over claims 1-20 is withdrawn in view of Applicants' amendments.

6. The 35 USC §101 rejection over claims 11-20 is withdrawn in view of Applicants' amendments.

Information Disclosure Statement

7. The Office acknowledges receipt of the Information Disclosure Statement filed on October 6, November 10, 2006, and January 23, 2007. It has been placed in the application file and the information referred' to therein has been considered by the examiner.

Response to Arguments

8. The Applicants are thanked for a· thorough reply. Applicants' arguments filed on December 13, 2006 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections – 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public · use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,961,925 to Callahan et al. (art made of record, hereinafter "Callahan").

Claim 1:

Callahan discloses a computer program product, a data processing system, and *a method, in a data processing system, for optimizing runtime execution of a computer program* (e.g., FIG. 2, col.9: 34 – col.14: 38), *comprising:*

modifying performance profile data accumulated during a trace of a computer program execution to include annotations based on the occurrence of one or more events during execution of the computer program (e.g., col.10: 32-50),

wherein the one or more events occur based on hardware counter values and performance indicators associated with one or more portions of the computer program (e.g., col.8: 35-41, 55-67; col.18: 51-58);

providing the annotated performance profile data to a computer program compiler (e.g., automatically providing annotations for entry-exit points, col.10: 1-5; annotations for functions containing at least a specified minimum number of source code statements, col.10: 5-9; annotations for parallelizable regions, col.10: 10-24); *and*

identifying one or more optimizations to the runtime execution of the computer program based on the performance profile data and the annotations (e.g., FIGs. 5A-I, col.18: 63 – col.19: 42, displaying trace information and identifying one or more optimizations).

Claim 2:

The rejection of claim 1 is incorporated. Callahan also discloses *outputting an indication of the identified one or more optimizations to a user* (e.g., col.18; 63 – col.19: 42).

Claim 3:

The rejection of claim 2 is incorporated. Callahan also discloses *receiving a user input selecting at least one of the one or more optimizations to be implemented;*

and implementing the selected at least one of the one or more optimizations to generate an optimized computer program (e.g., col.23: 41 – col.24: 15).

Claim 4:

The rejection of claim 3 is incorporated. Callahan also discloses *the one or more optimizations include at least one of an optimization to the instruction paths of the computer program, optimization of time spent during an initial application load of the computer program, and an optimization to storage of instructions or data in a cache or memory* (e.g., FIG. 10B, col.24: 16-47).

Claim 5:

The rejection of claim 1 is incorporated. Callahan also discloses *automatically implementing at least one of the one or more optimizations to the runtime execution of the computer program to generate an optimized computer program* (e.g., col.13: 7-49).

Claim 6:

The rejection of claim 3 is incorporated. Callahan also discloses *the one or more optimizations includes optimizing instructions paths of the computer program at branch points such that a more contiguous execution of instructions within the computer program is achieved* (e.g., col.13: 50 – col.14: 18).

Claim 7:

The rejection of claim 1 is incorporated. Callahan also discloses *the one or more optimizations includes optimizing storage of instructions or data in a cache so that portions of a cache line that is falsely shared are stored in the cache on different cache lines* (e.g., col.24: 16-47).

Claim 8:

The rejection of claim 2 is incorporated. Callahan also discloses *the indication is a graphical user interface through which a user may select respective ones of the one or more optimizations that are to be implemented with code of the computer program during compilation of the computer program* (e.g., col.8: 63 – col.9: 42).

Claim 9:

The rejection of claim 3 is incorporated. Callahan also discloses *the selected at least one of the one or more optimizations is implemented by a compiler during compilation of the computer program* (e.g., col.10: 1-24).

Claim 10:

The rejection of claim 5 is incorporated. Callahan also discloses *the at least one of the one or more optimizations is automatically implemented by a compiler during compilation of the computer program* (e.g., col.10: 32-50).

Claims 11-19:

Claims 11-19 are computer program product versions in a recordable-type computer readable medium, which recite the same limitations as those of claims 1-10, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claims, it also teaches all of the limitations of claims 11-19.

Claim 20:

Claim 20 is a data processing system version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 20.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by
the applicant for patent, except that an international application filed under the treaty defined in
section 351(a) shall have the effects for purposes of this subsection of an application filed in the
United States only if the international application designated the United States and was published
under Article 21(2) of such treaty in the English language.

12. Claims 1, 11, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by
US Patent No. 7,181,723 to Luk et al. (art made of record, hereinafter "Luk").

Claim 1:

Luk discloses a computer program product, a data processing system, and *a
method, in a data processing system, for optimizing runtime execution of a computer
program* (e.g., FIGs. 1-2, col.2: 3 – col.3: 57), *comprising:*

*modifying performance profile data accumulated during a trace of a
computer program execution to include annotations based on the occurrence of one
or more events during execution of the computer program* (e.g., FIG. 5, during a
trace, modifying performance profile data based on Data Cache Miss? (block 504),
Same Instruction Address...? (block 512), Is This The First Stride Product...? (block
522), Data Cache Miss? (block 518), col.5: 4 – col.7: 13),

*wherein the one or more events occur based on hardware counter
values and performance indicators associated with one or more portions of the
computer program* (e.g., col.1: 54-57; FIG. 2, Hardware Performance Counter 208,
col.3: 30-44; col.5: 12-27);

*providing the annotated performance profile data to a computer
program compiler* (e.g., FIG. 2, blocks 210-214, providing strides with associated
instruction addresses and data addresses to a compiler, col.1: 60-67; col.3: 57 –
col.4: 43); *and*

identifying one or more optimizations to the runtime execution of the computer program based on the performance profile data and the annotations (e.g., FIG. 5, block 524, col.6: 61 – col,.7: 13; col.1: 60 – col.2: 2; col.5: 12-27).

Claim 11:

Claim 11 is a computer program product version in a recordable-type computer readable medium, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 11.

Claim 20:

Claim 20 is a data processing system version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 20.

13. Claims 1, 11, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Publication No. 2004/0194076 A1 to Comp et al. (art made of record, hereinafter "Comp").

Claim 1:

Comp discloses a computer program product, a data processing system, and *a method, in a data processing system, for optimizing runtime execution of a computer program* (e.g., FIG. 2, [0009-0015]), *comprising:*

modifying performance profile data accumulated during a trace of a computer program execution to include annotations based on the occurrence of one or more events during execution of the computer program (e.g., FIG. 2, blocks 130-150, during a trace, modifying Profiling Counters, [0009-0011]),

wherein the one or more events occur based on hardware counter values and performance indicators associated with one or more portions of the

computer program (e.g., FIG. 2, events occur based on the fetched code portion, profiling counters and associated thresholds, blocks 130-150, [0010] and [0013]);

providing the annotated performance profile data to a computer program compiler (e.g., FIG. providing an appropriate annotation to block 160 Compile Bytecode? either for YES or NO, [0011-0012]); *and*

identifying one or more optimizations to the runtime execution of the computer program based on the performance profile data and the annotations (e.g., FIG. 2, block 170 → block 110 → block 120/YES → block 180 Run Compiled Code, [0009]).

Claim 11:

Claim 11 is a computer program product version in a recordable-type computer readable medium, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 11.

Claim 20:

Claim 20 is a data processing system version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 20.

Conclusion

14. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on Monday, Tuesday, Thursday, and Friday from 6:00AM to 4:30PM.
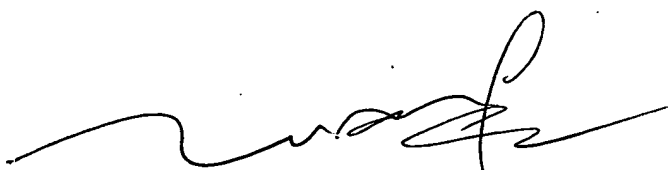
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao

TUAN DAM
SUPERVISORY PATENT EXAMINER